WE CLAIM:

1. A valve, comprising:

a glass valve housing having an inner surface and at least three conduit connection openings; and

a glass rotatable valve element within the valve housing, the rotatable valve element rotatable, about a valve element axis, between at least two positions,

wherein at least two of the at least three conduit connection openings are disposed in the valve housing at different angular positions relative to the rotatable valve element axis,

wherein the rotatable valve element comprises at least one fluid passage having a first end and a second end, wherein the first end aligns, in the at least two valve positions, to allow deliberate fluid communication with a different one of the at least two of the at least three conduit connection openings, wherein the second end aligns to allow deliberate fluid communication with an other of the at least three conduit connection openings, and

wherein a wall of the rotatable valve element is closely spaced from the inner surface of the valve housing, between the at least two conduit connection openings in the valve housing, such that when the first end is aligned for deliberate fluid communication with one of the at least two of the at least three conduits connection openings, the first end is substantially separated from an other of the at least two of the at least three conduit connections openings by the wall of the rotatable valve element and by the inner surface.

2. The valve of Claim 1, wherein one of the at least three conduit connection openings is a co-axial conduit connection opening that is coaxial with the valve element axis.

3. The valve of Claim 2, wherein the second end of the at least one fluid passage is coaxial with the valve element axis, wherein the co-axial conduit connection opening forms a contiguous path with the at least one fluid passage.

4. The valve of Claim 1, wherein the at least three conduit connection openings comprises four conduit connection openings.

5. The valve of Claim 4, wherein the rotatable valve element comprises a second fluid passage, separated from the first fluid passage, wherein the second fluid passage is configured such that one pair of conduit connection openings is in deliberate fluid communication via the first fluid passage when another pair of conduit connection openings is in deliberate fluid communication via the second fluid passage.

6. The valve of Claim 5, wherein the second fluid passage is formed by a recess in the wall of the rotatable element, wherein the recess is open to the inner surface.

7. The valve of Claim 6, wherein an other of the fluid passages has one end coaxial with the valve element axis, wherein one of the conduit connection openings is coaxial with the valve element axis and wherein the other of the fluid passages forms a contiguous path with the conduit connection opening that is coaxial with the valve element axis.

8. The valve of Claim 7, wherein one of the fluid passages is connected in fluid communication with a process chamber.

9. The valve of Claim 7, wherein another or the fluid passages is connected in fluid communication with a fluid exhaust.

10. The valve of Claim 1, wherein the inner surface of the valve housing is cylindrical.

11. The valve of Claim 1, further comprising one or more glass conduits welded to the outside of the valve housing, wherein each glass conduit is in fluid communication with one of the at least three conduit connection openings.

12. The valve of Claim 11, wherein the glass is quartz glass.

13. The valve of Claim 1, wherein the rotatable valve element is spaced from the valve housing by two seals, wherein each seal is spaced from the fluid passages.

14. The valve of Claim 13, wherein seals are glide bearings.

15. The valve of Claim 14, wherein the seals comprise polyvinylidene fluoride, polytetrafluoroethylene or the plastic sold under the trademark TURCITE®.

16. A valve for switching fluid flows, comprising:

a cylindrical rotatable part having a peripheral surface, the rotatable part accommodated within an enclosure having an inner surface facing the peripheral surface,

wherein the enclosure comprises at least two fluid input openings and a bypass opening, wherein the at least two fluid input openings and the bypass opening are on one plane,

wherein the rotatable part comprises at least a peripheral fluid passage and a second fluid passage, wherein the peripheral fluid passage is formed by the inner surface and a groove extending horizontally across the peripheral surface, wherein the groove is coplanar with the at least two fluid input openings and the bypass opening, wherein the second fluid passage has a second fluid passage opening on the peripheral surface, wherein the second fluid passage opening is coplanar with the at least two fluid input openings and the bypass opening,

wherein the rotatable part comprises one or more dividers separating the peripheral fluid passage from the second fluid passage, the one or more dividers extending to the peripheral surface, and

wherein the rotatable part is configured to rotate to align the second fluid passage opening with a first of the at least two fluid input openings in a first position and with a second of the at least two fluid input openings in a second position, wherein the groove is configured to fluidly connect the second of the at least two fluid input openings with the bypass opening when the rotatable part is in the first position and wherein the groove is configured to fluidly connect the first of the at least two fluid input openings with the bypass opening when the rotatable part is in the second position.

17. The valve of Claim 16, wherein the inner surface is separated by about 0.1 mm or less from the peripheral surface.

18. The valve of Claim 17, wherein the inner surface is separated by about 0.04 mm or less from the peripheral surface.

19. The valve of Claim 18, wherein the inner surface is separated by about 0.02 mm or less from the peripheral surface.

20. The valve of Claim 16, wherein the rotatable part and the enclosure are formed of a corrosion resistant material.

21. The valve of Claim 20, wherein the corrosion resistant material is a glass.

22. The valve of Claim 21, wherein the glass is chosen from the groups consisting of lead glass, borosilicate glass and quartz glass.

23. The valve of Claim 20, wherein the rotatable part and the enclosure are formed of the same corrosion resistant material.

24. The valve of Claim 16, wherein, on the plane, an area of the peripheral surface occupied by the groove is larger than an area of the peripheral surface occupied by the second fluid passage opening.

25. The valve of Claim 16, wherein the groove is open to the inner surface throughout a length of the groove.

26. A system for semiconductor processing, comprising:

a semiconductor process chamber;

a fluid switching valve connected to the chamber, wherein the valve comprises at least two fluid inputs connected to a glass housing, wherein the valve further comprises a rotatable glass element having a fluid passage, wherein the rotatable element is configured to rotate to alternatingly form a fluid flow path between the chamber, through the fluid passage, to one or an other of the at least two fluid inputs.

27. The system of Claim 26, wherein the chamber is part of a floating substrate reactor.

28. The system of Claim 27, wherein the reactor is the reactor sold under the trademark LEVITOR®.

29. The system of Claim 26, further comprising a pneumatic cylinder connected to the valve for rotating the rotatable element.

30. The system of Claim 26, further comprising an exhaust connected to the switching valve, wherein the chamber is dimensioned such that fluid pressure in a flow path with the processing chamber is larger than fluid pressure in a flow path with the exhaust.

31. The system of Claim 26, programmed to deliver a sequence of fluid flows from each of the at least two fluid inputs through the chamber, wherein a magnitude of the fluid flows through the chamber is substantially constant.

32. The system of Claim 31, wherein the glass housing comprises an exhaust, wherein the system is programmed to switch the at least two fluid inputs between flowing into the chamber and flowing into the exhaust.

33. The system of Claim 32, programmed to process a plurality of substrates one by one without stopping a flow of any fluid from the at least two fluid inputs through the valve.

34. A method for semiconductor processing, comprising:

loading a substrate into a semiconductor process chamber; and

switching a flow of fluid into the reaction chamber by rotating a valve to select between at least two fluid sources, wherein the valve comprises a glass rotatable part accommodated within a glass housing.

35. The method of Claim 34, wherein the fluids are gases.

36. The method of Claim 35, wherein the flow of the fluids floatingly supports the substrate, wherein the substrate remains floatingly supported throughout switching a flow of fluid.

37. The method of Claim 34, wherein switching a flow of fluid alternates the flow of fluid between a process gas flow and an inert gas flow.

38. The method of Claim 37, wherein the inert gas flow comprises nitrogen gas.

39. The method of Claim 37, wherein the process gas flow comprises pyrogenic steam.

40. The method of Claim 39, wherein the valve comprises an exhaust and further comprising continuously generating pyrogenic steam and flowing the steam out the exhaust when the inert gas is flowed into the reaction chamber.

41. The method of Claim 37, wherein a magnitude of each gas flow is approximately equal.

42. The method of Claim 41, wherein the magnitudes the gas flows differ by about 20 percent or less.